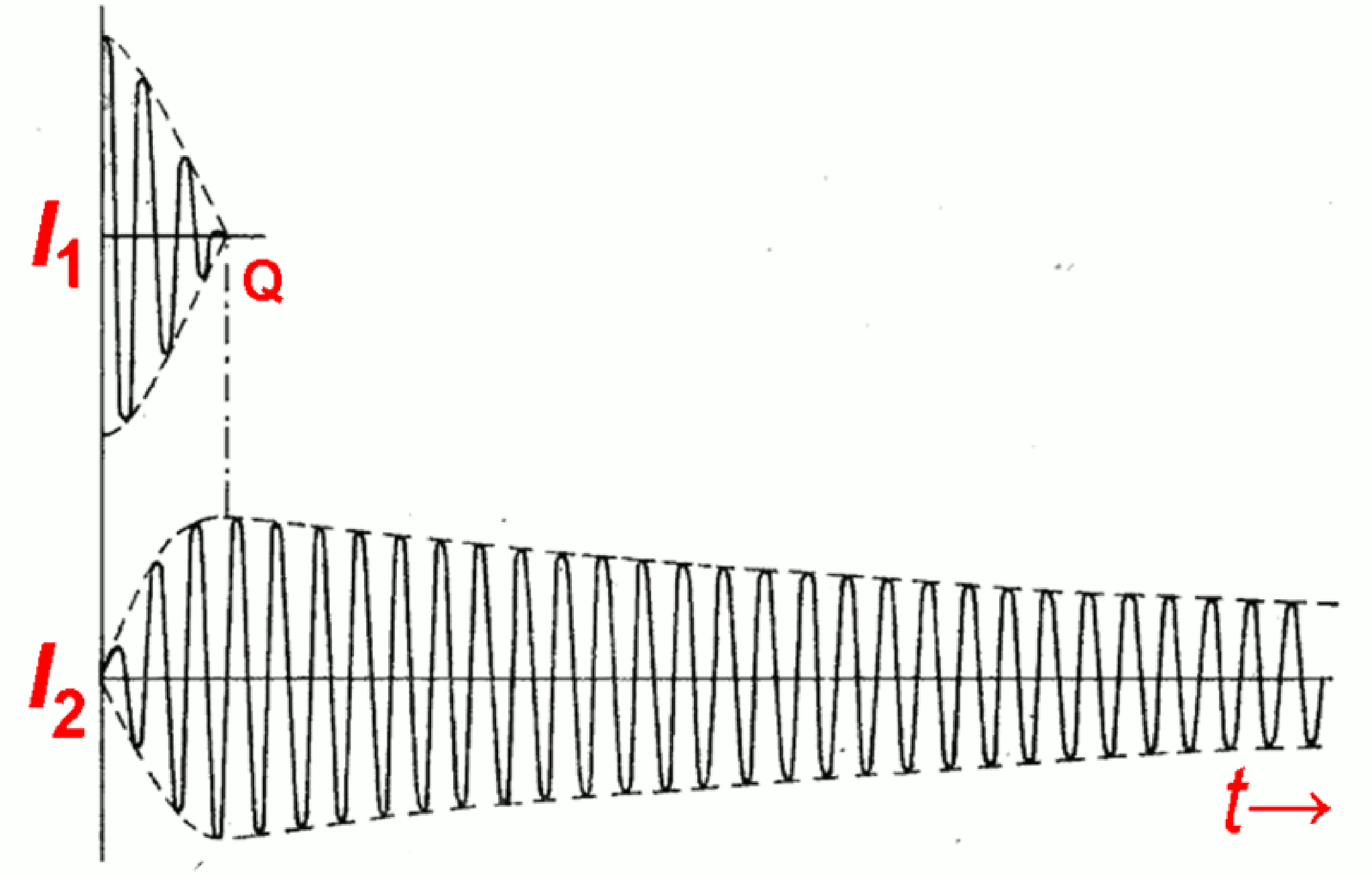
File:Spark-gap transmitter current waveforms - quenched gap.png



Size of this preview: 800 × 524 pixels.

Original file (863 × 565 pixels, file size: 35 KB, MIME type: image/png)

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Summary

Description	**English:** Graph of the current in the primary (*I*$_1$) and secondary (*I*$_2$) circuit of a quenched-spark inductively coupled spark-gap transmitter, an obsolete type of radio transmitter. This image is meant to contrast with Spark-gap transmitter current waveforms.png, showing how the quenched spark gap prevents loss of energy in the ordinary inductively coupled circuit. The circuit consists of an air core resonant transformer whose primary is connected to a capacitor through a spark gap, forming a tuned circuit and whose secondary is connected to an antenna and ground. The secondary also forms a tuned circuit with the capacitance of the antenna. When the capacitor is discharged through the spark gap, the energy creates oscillating radio frequency current in the primary winding. The energy is transferred to the secondary winding, and the oscillating current in the primary circuit decreases to zero while the current in the secondary increases to a maximum. At this point (*Q*) the quenched spark gap extinguishes ("quenches") the spark. This allows the oscillating energy to stay in the secondary antenna circuit, creating long ringing waves which have lower damping.
Date	1921
Source	Retrieved 17 August 2018 from Bernard John Leggett (1921) *Wireless Telegraphy: With Special Reference to the Quenched-spark System*, E. P. Dutton and Co., New York, p. 57,

fig. 14 on Google Books. Alterations to image: added labels in red.